

SOI MOSFET WITH ASYMMETRICAL SOURCE/BODY AND DRAIN/BODY JUNCTIONS

ABSTRACT

A semiconductor-on-insulator (SOI) device. The SOI device includes a substrate, an insulator layer disposed on the substrate and an active region disposed on the insulator layer. The active region includes a source, a drain, and a body disposed therebetween. The source and body form an abrupt or hyperabrupt source/body junction. A gate is disposed on the body to operatively form a transistor. An implanted region forms an interface between the body and the drain, the implanted region formed by tilted atom implantation in a direction towards the active region and under the gate from an angle tilted towards the drain with respect to vertical, the implanted region resulting in the formation of a graded drain/body junction. Also disclosed is a method of fabricating the SOI device.

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